

## WHAT IS CLAIMED IS:

1. An apparatus to feed a paper in an image forming apparatus comprising:  
a pick-up roller rotated by a pick-up motor, to pick up a paper;  
a media sensor having a light emitting unit positioned on a paper transferring path, to emit light onto a paper moved forward by the pick-up roller;  
at least one light receiving unit installed at a predetermined angle with respect to the paper, to receive light reflected from the paper, the paper being illuminated by the light from the light emitting unit and moved forward along the paper transferring path;  
a pick-up switch unit to output a paper entrance determination signal by comparing an output signal from the light receiving unit with a predetermined reference signal; and  
a controller to determine whether a paper is provided on a basis of the paper entrance determination signal input from the pick-up switch unit, and to determine a paper type using an output signal from the light receiving unit.
2. The apparatus according to claim 1, further comprising an A/D (Analog/Digital) converter to convert the output signal from the light receiving unit into a digital signal and applying the same to the controller.
3. The apparatus according to claim 1, wherein the light receiving unit comprises two phototransistors installed at different angles with respect to a paper provided to the paper transferring path.
4. The apparatus according to claim 3, wherein the controller determines a paper type according to a ratio of output values from the two phototransistors.
5. A method of feeding a paper in an image forming apparatus that includes : a pick-up roller rotated by a pick-up motor, to pick up a paper; a driving roller and a feeding roller rotated respectively by a line feeding motor, to transfer the paper; and a media sensor having a light emitting unit to emit light onto the paper, a light receiving unit to receive the light reflected from the paper, and a pick-up switch unit to output a paper entrance determination signal by comparing the output signal from the light receiving unit with a predetermined reference signal set in advance, the method comprising :

if a printing command is received, driving the pick-up motor, and simultaneously turning on the light emitting unit of the media sensor;

if the light receiving unit is turned on and a paper entrance determination signal is output from the pick-up switching part, determining that the paper is provided and turning off the light emitting unit;

if the pick-up roller is rotated and a paper is transferred up to the driving roller, aligning the paper by driving the line feeding motor backward;

if the paper is aligned, detecting a paper type by turning on the media sensor; and

if detection of the paper type is completed, feeding a paper by rotating the feeding roller forward, and performing printing depending on the detected paper type.

6. The method according to claim 5, wherein the light receiving unit comprises two phototransistors installed at different angles with respect to the paper.

7. The method according to claim 5, wherein the detecting of the paper type includes sequentially turning on the light emitting unit, computing a ratio of output values provided from the two transistors, and determining a paper type among the set paper types depending on the ratio of the output values.